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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/220,905	12/24/98	BULLISTER E	45

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LMC1/0519

EXAMINER

LEWIS, D

ART UNIT	PAPER NUMBER
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2778

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DATE MAILED: 05/19/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/220,905

Applicant(s)

Bullister

Examiner

David L Lewis

Group Art Unit
2778



- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Title: Mouse And Trackball With Optical Measurement Optics

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to because of the following informalities: The last two lines of claim 11 include two limitations that depend on claim 11, wherein said device is a mouse or a trackback. It appears the limitations were intended to be included as two separate claims both dependent on claim 11, and have been addressed in the rejection of claim 11. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
3. **Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Kato (4647771).**

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4. **As in claim 1, Kato teaches of a method for time-sharing a motion detector, column 1 lines 48-49** wherein time-sharing and time-division are equivalent terms, including the steps of: illuminating a first area of a surface; illuminating a second area of a surface, **wherein figure 1 items 9X and 9Y are light sources**, also see figures 3 and 4: collecting data through the said motion detector through an optical signal representing the image of the first area; and collecting data through the said motion detector through an optical signal representing the image of the second area, **wherein figures 3 and 4 show collection means, also taught in prior art discussion, column 1 lines 42-58. As in claim 2, Kato teaches of wherein said illumination of said first area and said illumination of the second area alternate in time such that one of said areas is not illuminated while the other of said areas is illuminated, column 1 lines 49-51. As in claim 3 Kato teaches of calculating the motion of said first and second areas, column 1 line 42 to column 2 line 24.**
5. **Claim 11 is rejected under 35 U.S.C. 102(a) as being anticipated by Bidiville et al. (5288993).**
6. **As in claim 11, Bidiville et al. teaches of a device for input of coordinate information into a computer, comprising: a ball, figure 1 item 60; a housing for holding the said ball, figure 1 item 20; a sphere coextensive with said ball and having an rotational orientation fixed with respect to said housing, figure 1 item 60 wherein a surface sphere of randomized patterns coexist on said ball**

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surface; a first emitter, column 4 line 21-22; a second emitter, column 4 line 23, figure 2A, 2B items 200; a detector, column 4 line 54; a path for communication of an optical signal from said areas to said detector, figure 2A, column 6 lines 25-60, wherein the path is from light source to ball, then to detector array, which is converted to an output signal. Further, Bidiville teaches of said input device in the well known form being a mouse or trackball as found in the two un-numbered claims, dependent on claim 11, column 1 lines 14-22.

7. **Claim 12 is rejected under 35 U.S.C. 102(a) as being anticipated by Tak (5635956).**
8. **As in claim 12, Tak teaches of a device for measuring motion corresponding to coordinate information for input to a computer, comprising: a foundation, figure 4 item 1, a spherical ball, figure 4 item 2, said spherical ball being rotatable, figure 4A, carrying a pattern of shapes on the surface, figure 4B, a sensor, said sensor being supported by a foundation, figure 4A item 17, capable of detecting electromagnetic radiation emanating from a portion the surface of said ball, (wherein as well known, examples of electromagnetic radiation are Radio waves, light, and X rays), and capable of detecting said contrasting reflective properties on said ball, column 3 lines 40-60, whereby said sensor can detect a given geometrical shape from a set of repeating geometrical shapes and thereby measure the rotation of said ball, column 4 lines 1-20.**

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Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 4-8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (4647771) in view of Tak (5635956).**

11. **As in claim 4, Kato teaches of the well known method for time-sharing a motion detector as applied to claim 1 above. However Kato does not teach of wherein said first and second areas are on the surface of a ball. Tak teaches of a well known motion detector wherein said motion corresponds to rotation of a ball. Further Tak teaches of illuminating the surface area of the ball, and collecting position information from an optical system to determine the two dimensional x and y axis coordinate movement. It would have be obvious to a skilled artisan at the time of the invention to modify the motion detector as taught by Kato by forming said first and second areas on the surface of a ball, as**

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taught by Tak, for the purpose of providing a compact mouse having an optical reflector, as suggested by Tak. **Further, dependent claims 5-8, and 10** would have also been obvious to the skilled artisan over of Kato in view of Tak for the purpose of providing a compact input device. Said compact input device could obviously be of the well known mouse or trackball type.

12. **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (4647771) in view of Tak (5635956), further in view of Chen (5019809).**
13. **As in claim 9, Kato in view of Tak teaches** of the invention as applied above to claim 7. Further, Chen teaches of a technique for emulating a three dimensional computer input control device with a two dimensional computer input controller device. As found in claim 9, it would be obvious to the skilled artisan that the two-dimensional x and y axis information could be utilized to produce three-dimensional information, as taught by Chen.
14. **Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tak (5635956).**
15. The claims language of dependant **claims 13-16** discusses various geometric patterns which would be obvious over Tak, in view of the geometric pattern as taught by Tak, wherein he teaches of a

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regular golf ball like surface, which can further encompass a variety of patterns within it geometric shape, as shown in figures 4 and 6.

16. **Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tak (5635956), further in view of Bidiville et al. (5288993)**

17. **As in claim 17, Tak teaches of the invention as applied to claim 12 above. Further Tak teaches of a first emitter for illuminating a first area on said sphere, a detector for detecting motion of the surface of said ball, a path for communication of an optical signal from said first and second area on said sphere to said detector. However Tak is silent as to said second emitter. Bidiville et al. teaches of a device for measuring motion corresponding to coordinate information for input to a computer, comprising: a first emitter, and an optional second emitter, figure 2B, column 4 lines 19-35. It would be obvious to the skilled artisan that said motion detection as taught by Tak can be implemented in the optional second emitter format structure, because both devices solve similar problems in that they are capable of detecting electromagnetic radiation emanating from a portion of the surface of said ball, to determine coordinate data. Further, as in claim 18 and 19 said first and second areas are on a sphere coextensive with a ball, Tak (figure 4B), which are regular and reflective, column 3 lines 14-20. As in claim 20, Bidiville et al. teaches wherein said ball carries and irregular pattern, column 4 lines 1-15.**

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Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
Koh et al. (5122654).
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on M,T and TH,F from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Or hand-delivered to:



Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



**Bipin H. Shalwala
Primary Examiner**